

WE CLAIM:

- 1 1. A method of navigating, based upon a first telephone number, to a resource that is
2 stored in a network and identified by a location identifier, comprising the steps of:
3 storing the first telephone number relating to the resource and an associated location
4 identifier of the resource;
5 receiving a request to locate the resource containing, said request including the first
6 telephone number;
7 retrieving the location identifier associated with the first telephone number; and
8 delivering the resource to the user using the location identifier.
- 1 2. The method recited in claim 1, further comprising the steps of:
2 storing at least a second telephone number associated with the resource;
3 receiving requests to locate the resource based on one of the first and second
4 telephone numbers;
5 retrieving the location identifier associated with the said one of the first and second
6 telephone numbers; and
7 retrieving and displaying the resource using the location identifier.
- 1 3. The method recited in claim 2, further comprising the steps of:
2 storing the first and second telephone numbers in association with the location
3 identifier, and in a number file in a storage device associated with the resource.
- 1 4. The method recited in claim 3, further comprising the steps of:
2 retrieving the number file;
3 parsing the number file;
4 building an index entry based on the values parsed from the number file; and

storing the index entry in an index that is stored apart from the storage device.

5. The method recited in claim 4, further comprising the steps of:

sending the number file over the network to a client associated with the resource;

storing the number file in a server storage device of a server associated with the client.

6. The method recited in claim 5, further comprising the steps of:

periodically polling the number file on the server associated with the client;

testing whether one of the telephone numbers stored in the number file matches a third

telephone number stored in a database indexed by the index; and

updating the database when changes are detected in the number file.

7. The method recited in claim 6, further comprising the step of:

synchronizing the index to the database.

8. The method recited in claim 1, wherein the step of storing the first telephone number comprises the steps of:

receiving a client identifier of a client associated with the resource;

generating a set of metadata that describes the resource, the location identifier, and the client identifier; and

storing the set of metadata in a persistent storage device associated with the client.

9. The method recited in claim 8, further comprising the steps of:

assigning a randomly generated name to the set of metadata.

10. The method recited in claim 9, further comprising the steps of:

instructing the client to store the metadata in a particular authorized location in the persistent storage device.

11. The method recited in claim 9, further comprising the steps of:

registering the set of metadata and the randomly generated name in a database.

12. A method of locating a network resource in a network, comprising the steps of:

connecting a client over the network to an index of mappings of telephone numbers to network resource locations;

submitting a request from the client to the index to obtain one or more network resource locations that map to one of said telephone numbers;

querying the index for one or more network resource locations;

receiving from the index the network resource locations that map to the telephone number; and

delivering the network resource from the one or more network resource locations to the client.

13. The method of claim 12, wherein the step of connecting a client includes the step of connecting the client to the index using a browser coupled to a resolution process, and further comprising the step of:

redirecting the browser to the network resource located at the one of the network resource locations.

14. A system comprising:

a client that executes a World Wide Web browser,

a server for storing a network resource,

a database for storing a mapping of a plurality of telephone numbers related to the network resource to a Uniform Resource Locator of the network resource, and a network for interconnecting the browser, the server, and the database, the system operating to:

- receive a telephone number of the network resource in the browser;
- obtain, from the database, the Uniform Resource Locator of the network resource that corresponds to the telephone number received in the browser;
- redirect the browser to locate the network resource at the Uniform Resource Locator; and
- display the network resource at the client.

15. A computer data signal embodied in a carrier wave, the computer data signal carrying one or more sequences of instructions for naming and locating network resources, wherein execution of the one or more sequences of instructions by one or more processors causes the one or more processors to perform the steps of:

- storing a first telephone number associated with the resource and a location identifier of the resource;
- receiving a request to locate the resource, the request including the first telephone number;
- retrieving the location identifier associated with the first telephone number; and
- delivering the resource to a client using the location identifier.

16. The computer data signal recited in claim 15, wherein execution of the one or more sequences of instructions by one or more processors causes the one or more processors to perform the further steps of:

4 storing at least a second telephone number associated with the location identifier;
5 receiving requests to locate the resource based on one of the first and second
6 telephone numbers;
7 retrieving the location identifier associated with one of the first and second
8 telephone numbers; and
9 retrieving and displaying the resource using the location identifier.

1 17. The computer data signal recited in claim 16, wherein execution of the one or more
2 sequences of instructions by one or more processors causes the one or more processors to perform
3 the further steps of:

4 storing the first and second telephone numbers in association with the location
5 identifier, and in a number file in a storage device associated with the resource.

1 18. The computer data signal recited in claim 17, wherein execution of the one or more
2 sequences of instructions by one or more processors causes the one or more processors to perform
3 the further steps of:

4 retrieving the number file;

5 parsing the number file;

6 building an index entry based on the values parsed from the number file; and

7 storing the index entry in an index that is stored apart from the storage device.

1 19. The computer data signal recited in claim 18, wherein execution of the one or more
2 sequences of instructions by one or more processors causes the one or more processors to perform
3 the further steps of:

4 sending the number file over the network to a client associated with the resource;

5 storing the number file in a server storage device of a server associated with the
6 client.

1 20. The computer data signal recited in claim 19, wherein execution of the one or more
2 sequences of instructions by one or more processors causes the one or more processors to perform
3 the further steps of:

4 periodically polling the number file on the server associated with the client;

5 testing whether one of the telephone numbers stored in the number file matches a
6 third telephone number stored in a database indexed by the index; and

7 updating the database when changes are detected in the number file.

1 21. The computer data signal recited in claim 20, wherein execution of the one or more
2 sequences of instructions by one or more processors causes the one or more processors to perform
3 the further steps of:

4 synchronizing the index to the database.

1 22. The computer data signal recited in claim 15, wherein execution of the one or more
2 sequences of instructions by one or more processors causes the one or more processors to perform
3 the step of storing a first telephone number by:

4 receiving a client identifier of a client associated with the resource;

5 generating a set of metadata that describes the resource, the location identifier, and
6 the client identifier; and

7 storing the set of metadata in a persistent storage device associated with the client.

1 23. The computer data signal recited in claim 22, wherein execution of the one or more
2 sequences of instructions by one or more processors causes the one or more processors to perform
3 the further steps of:

4 assigning a randomly generated name to the set of metadata.

1 24. The computer data signal recited in claim 23, wherein execution of the one or more
2 sequences of instructions by one or more processors causes the one or more processors to perform
3 the further steps of:

4 instructing the client to store the metadata in a particular authorized location in the
5 persistent storage device.

1 25. The computer data signal recited in claim 24, wherein execution of the one or more
2 sequences of instructions by one or more processors causes the one or more processors to perform
3 the further steps of:

4 registering the set of metadata and the randomly generated name in a database.

1 26. A computer apparatus comprising:

2 a processor; and

3 a memory coupled to the processor, the memory containing one or more sequences
4 of instructions for naming and locating network resources, wherein execution of the one or more
5 sequences of instructions by the processor causes the processor to perform the steps of:

6 storing a first telephone number relating to the resource in association with the
7 location identifier of the resource;

8 receiving a request to locate the resource, the request including the first telephone
9 number;

10 retrieving the location identifier associated with the first telephone number; and

11 delivering the resource to a client using the location identifier.

1 27. The computer apparatus recited in claim 26, wherein execution of the one or more
2 sequences of instructions by one or more processors causes the one or more processors to perform
3 the further steps of:

4 storing at least a second telephone number for the resource, in association with the
5 location identifier;

6 receiving requests to locate the resource based on one of the first and second
7 telephone numbers;

8 retrieving the location identifier associated with the one of the first and second
9 telephone number; and

10 retrieving and displaying the resource using the location identifier.

1 28. The computer apparatus recited in claim 27, wherein execution of the one or more
2 sequences of instructions by one or more processors causes the one or more processors to perform
3 the further steps of:

4 storing the first and second telephone numbers in association with the location
5 identifier, and in a number file in a storage device associated with the resource.

1 29. The computer apparatus recited in claim 28, wherein execution of the one or more
2 sequences of instructions by one or more processors causes the one or more processors to perform
3 the further steps of:

4 retrieving the number file;

5 parsing the number file;

6 building an index entry based on the values parsed from the number file; and

7 storing the index entry in an index that is stored apart from the storage device.

1 30. The computer apparatus recited in claim 29, wherein execution of the one or more
2 sequences of instructions by one or more processors causes the one or more processors to perform
3 the further steps of:

4 sending the number file over the network to a client associated with the resource;
5 storing the number file in a server storage device of a server associated with the
6 client.

1 31. The computer apparatus recited in claim 30, wherein execution of the one or more
2 sequences of instructions by one or more processors causes the one or more processors to perform
3 the further steps of:

4 periodically polling the number file on the server associated with the client;
5 testing whether one of the telephone numbers stored in the number file matches a
6 third telephone number stored in a database indexed by the index; and updating the database when
7 changes are detected in the number file.

1 32. The computer apparatus recited in claim 31, wherein execution of the one or more
2 sequences of instructions by one or more processors causes the one or more processors to perform
3 the further step of:

4 synchronizing the index to the database.

1 33. The computer apparatus recited in claim 27, wherein execution of the one or more
2 sequences of instructions by one or more processors causes the one or more processors to perform
3 the step of storing a first telephone number by:

4 receiving a client identifier of a client associated with the resource;
5 generating a set of metadata that describes the resource, the location identifier, and
6 the client identifier; and

7 storing the set of metadata in a persistent storage device associated with the client.

1 34. The computer apparatus recited in claim 33, wherein execution of the one or more
2 sequences of instructions by one or more processors causes the one or more processors to perform
3 the further steps of:

4 assigning a randomly generated name to the set of metadata.

1 35. The computer apparatus recited in claim 34, wherein execution of the one or more
2 sequences of instructions by one or more processors causes the one or more processors to perform
3 the further steps of:

4 instructing the client to store the metadata in a particular authorized location in the
5 persistent storage device.

1 36. The computer apparatus recited in claim 35, wherein execution of the one or more
2 sequences of instructions by one or more processors causes the one or more processors to perform
3 the further steps of:

4 registering the set of metadata and the randomly generated name in a database.

1 37. A computer-readable medium carrying one or more sequences of instructions for
2 naming and locating network resources, wherein execution of the one or more sequences of
3 instructions by one or more processors causes the one or more processors to perform the steps of:

4 storing a first telephone number of the resource in association with the location
5 identifier of the resource;

6 receiving a request to locate the resource, the request including the first telephone
7 number;

8 retrieving the location identifier associated with the first telephone number; and
9 delivering the resource to a client using the location identifier.

1 38. The computer-readable medium recited in claim 37, wherein execution of the one
2 or more sequences of instructions by one or more processors causes the one or more processors to
3 perform the further steps of:

4 storing at least a second telephone number for the resource in association with the
5 location identifier;

6 receiving requests to locate the resource based on the first and second telephone
7 numbers;

8 retrieving the location identifier associated with the first and second telephone
9 numbers; and

10 retrieving and displaying the resource using the location identifier.

1 39. The computer-readable medium recited in claim 38, wherein execution of the one
2 or more sequences of instructions by one or more processors causes the one or more processors to
3 perform the further steps of:

4 storing the first and second telephone numbers in association with the location
5 identifier, and in a number file in a storage device associated with the resource.

1 40. The computer-readable medium recited in claim 39, wherein execution of the one
2 or more sequences of instructions by one or more processors causes the one or more processors to
3 perform the further steps of:

4 retrieving the number file;

5 parsing the number file;

6 building an index entry based on the values parsed from the number file; and

7 storing the index entry in an index that is stored apart from the storage device.

1 41. The computer-readable medium recited in claim 40, wherein execution of the one
2 or more sequences of instructions by one or more processors causes the one or more processors to
3 perform the further steps of:

4 sending the number file over the network to a client associated with the resource;
5 storing the number file in a server storage device of a server associated with the
6 client.

1 42. The computer-readable medium recited in claim 41, wherein execution of the one
2 or more sequences of instructions by one or more processors causes the one or more processors to
3 perform the further steps of:

4 periodically polling the number file on the server associated with the client;
5 testing whether one of the telephone numbers stored in the number file matches a
6 third telephone number stored in a database indexed by the index; and
7 updating the database when changes are detected in the number file.

1 43. The computer-readable medium recited in claim 42, wherein execution of the one
2 or more sequences of instructions by one or more processors causes the one or more processors to
3 perform the further steps of:

4 synchronizing the index to the database.

1 44. The computer-readable medium recited in claim 37, wherein execution of the one
2 or more sequences of instructions by one or more processors causes the one or more processors to
3 perform the step of storing a first telephone number by:

4 receiving a client identifier of a client associated with the resource;
5 generating a set of metadata that describes the resource, the location identifier, and
6 the client identifier; and

7 storing the set of metadata in a persistent storage device associated with the client.

1 45. The computer-readable medium recited in claim 44, wherein execution of the one
2 or more sequences of instructions by one or more processors causes the one or more processors to
3 perform the further steps of:

4 assigning a randomly generated name to the set of metadata.

1 46. The computer-readable medium recited in claim 45, wherein execution of the one
2 or more sequences of instructions by one or more processors causes the one or more processors to
3 perform the further steps of:

4 instructing the client to store the metadata in a particular authorized location in the
5 persistent storage device.

1 47. The computer-readable medium recited in claim 46, wherein execution of the one
2 or more sequences of instructions by one or more processors causes the one or more processors to
3 perform the further steps of:

4 registering the set of metadata and the randomly generated name in a database.

1 48. A method of locating a resource that is stored in a location in a network that is
2 identified by a location identifier, comprising the steps of:

3 storing, in a metadata registry, metadata that describes the resource in association
4 with the location identifier of the resource;

5 receiving a request to locate the resource, the request containing an element of the
6 metadata;

7 retrieving the location identifier associated with the resource from the metadata
8 registry based on the element; and

9 retrieving the resource over the network using the location identifier

10 wherein,
11 said storing step includes storing a telephone number for the resource in the
12 metadata;
13 said receiving step includes receiving a request to locate the resource based
14 on the telephone number; and
15 said first retrieving step includes retrieving the location identifier associated
16 with the telephone number from the metadata registry using the telephone number.

1 49. The method recited in claim 48, in which the step of storing metadata comprises the
2 step of storing the metadata in a first storage device, and further comprising the steps of:
3 storing the telephone number in association with the location identifier in a second
4 storage device associated with the resource.

1 50. The method recited in claim 48, in which the step of storing the telephone number
2 comprises the step of storing the telephone number in a number file, and further comprising the
3 steps of retrieving the number file;
4 parsing the number file;
5 building an index entry based on the values parsed from the number file; and
6 storing the index entry in an index of the metadata registry.

1 51. The method recited in claim 48, further comprising the steps of:
2 sending the number file over the network to a client associated with the resource;
3 storing the number file at the location.

1 52. The method recited in claim 50, further comprising the steps of:
2 periodically polling the number file that is stored at the client;

testing whether the telephone number stored in the number file matches a second telephone number stored in the metadata registry; and

updating the metadata registry' when a change is detected in the number file.

53. The method recited in claim 50, in which the step of building an index entry based on the values parsed from the number file and the step of storing the index entry further comprise the steps of:

establishing, in a memory, a first index, a second index, a first queue associated with the first index, and a second queue associated with the second index;

receiving a request to build an index entry based on the values parsed from the number file;

selecting the first queue and storing the request in the first queue;

when the first queue is sufficiently full, storing the contents of the first queue in the first index, and

concurrently selecting the second queue and storing a subsequent request to build an index entry in the second queue.

54. The method recited in claim 53, further comprising the step of alternately selecting the first queue and the second queue in response to successive requests to build an index entry.

55. The method recited in claim 49, in which the step of storing the telephone number comprises the step of storing the telephone number in a number file, and further

comprising the steps of:

retrieving the number file;

parsing the number file;

6 testing whether the telephone number stored in the number file matches a second
7 telephone number stored in the metadata registry;

8 updating the metadata registry when a change is detected in the number file;

9 building an updated index entry based on the values parsed from the number file;

10 and

11 storing the index entry in an index of the metadata registry.

1 56. The method recited in claim 55, further comprising the steps of:

2 periodically polling the number file on the server associated with the client;

3 testing whether one of the telephone numbers stored in the number file matches a

4 third

5 telephone number stored in a database indexed by the index; and

6 updating the database when changes are detected in the number file.

1 57. The method recited in claim 56, further comprising the step of:

2 synchronizing the index to the database.

1 58. The method recited in claim 57, wherein the step of storing a first telephone

2 number comprises the steps of:

3 receiving a client identifier of a client associated with the resource;

4 generating a set of metadata that describes the resource, the location identifier, and
5 the client identifier; and

6 storing the set of metadata in a persistent storage device associated with the client.

1 59. The method recited in claim 51, in which the step of storing the number file at the

2 location further comprises the step of storing the number file on a Web server that is part of a

3 domain that is mapped to the metadata in the number file.

1 60. The method recited in claim 53, in which the step of establishing a first index, a
2 second index, a first queue associated with the first index, and a second queue associated with the
3 second index further comprises the steps of establishing the first queue in a first server and
4 establishing the second queue in a second server that is separate from the first server.

1 61. A method of locating a resource, based upon a first telephone number, said
2 resource stored in a network and identified by a location identifier, comprising the steps of:
3 storing the first telephone number relating to the resource and an associated location
4 identifier of the resource;
5 receiving a request to locate the resource containing, said request including the first
6 telephone number;
7 retrieving the location identifier associated with the first telephone number; and
8 identifying the resource to the user using the location identifier.

1 62. The method of claim 61, including the further step of the user communicating with
2 the resource identified by the location identifier.

1 63. The method of claim 61, wherein said resource is a mobile telephone.

1 64. The method of claim 63, wherein the mobile telephone has video capabilities.

1 65. The method of claim 61, wherein the resource is a personal digital assistant (PDA).

1 66. A method of locating a resource that is stored in a location in a network that is
2 identified by a location identifier, comprising the steps of:
3 storing, in a metadata registry in a first storage device, metadata that describes the
4 resource in association with the location identifier of the resource;
5 receiving a request to locate the resource, the request containing an element of the
6 metadata;

7 retrieving the location identifier associated with the resource from the metadata
8 registry based on the element;
9 retrieving the resource over the network using the location identifier;
10 storing a telephone number for the resource in the metadata;
11 receiving a request to locate the resource based on the telephone number;
12 retrieving the location identifier associated with the telephone number from the
13 metadata registry using the telephone number;
14 storing the telephone number in association with the location identifier in a number
15 file in a second storage device associated with the resource;
16 retrieving the number file;
17 parsing the number file;
18 building an index entry based on the values parsed from the number file and storing
19 the index entry in an index of the metadata registry by:
20 establishing, in a memory, a first index, a second index, a first queue associated
21 with the first index, and a second queue associated with the second index;
22 receiving a request to build an index entry based on the values parsed from the
23 number file;
24 selecting the first queue and storing the request in the first queue; and
25 when the first queue is sufficiently full, storing the contents of the first queue in the
26 first index, and concurrently selecting the second queue and storing a subsequent request to build
27 an index entry in the second queue.

1 67. A method of locating a resource that is stored in a location in a network that is
2 identified by a location identifier, comprising the steps of:

3 storing, in a metadata registry in a first storage device, metadata that describes the
4 resource in association with the location identifier of the resource;

5 receiving a request to locate the resource, the request containing an element of the
6 metadata;

7 retrieving the location identifier associated with the resource from the metadata
8 registry based on the element;

9 retrieving the resource over the network using the location identifier;

10 storing a telephone number for the resource in the metadata in association with the
11 location identifier in a number file in a second storage device associated with the resource;

12 receiving a request to locate the resource based on the telephone number;

13 retrieving the location identifier associated with the telephone number from the
14 metadata registry using the telephone number;

15 retrieving the number file, parsing the number file; building an index entry based
16 on the values parsed from the number file; and storing the index entry in an index of the metadata
17 registry;

18 establishing, in a memory, a first index, a second index, a first queue associated
19 with the first index, and a second queue associated with the second index;

20 receiving a request to build an index entry based on the values parsed from the
21 number file; selecting the first queue and storing the request in the first queue, and when the first
22 queue is sufficiently full, storing the contents of the first queue in the first index, and concurrently
23 selecting the second queue and storing a subsequent request to build an index entry in the second
24 queue; and

25 alternately selecting the first queue and the second queue in response to successive
26 requests to build an index entry.

1 68. A method of locating a resource that is stored in a location in a network that is
2 identified by a location identifier, comprising the steps of:
3 storing, in a metadata registry in a first storage device, metadata that describes the
4 resource in association with the location identifier of the resource;
5 receiving a request to locate the resource, the request containing at least a portion of
6 a telephone number;
7 retrieving the location identifier associated with the resource from the metadata
8 registry based on the telephone number; and
9 retrieving the resource over the network using the location identifier.

1 69. The method of claim 68, wherein the request comprises a complete telephone
2 number.

1 70. The method of claim 69, wherein the telephone number includes an area code.

1 71. The method of claim 69, wherein the telephone number includes a country code.

1 72. The method of claim 69, wherein the telephone number includes one or more of a:
2 a numeric, alphanumeric, symbol-based and mixed prefix and a numeric, alphanumeric, symbol-
3 based and mixed extension.

1 73. The method of claim 68, wherein the at least a portion of the telephone number
2 includes less than a complete telephone number and wherein the method includes the further step of
3 matching the portion of the telephone number to one or more complete telephone numbers in a
4 database.

1 74. The method of claim 68, wherein the telephone number is one or more of a mobile
2 and landline-based telephone number.

1 75. The method of claim 68, wherein the resource facilitates delivery of one or more
2 of: a web page, file, task or meeting request, e-mail , SMS message, voice and video message to
3 an individual associated with the telephone number.

1 76. A method of retrieving a first web page by a user utilizing a web browser,
2 comprising the steps of:
3 entering a telephone number in a data entry field of a web browser; and
4 receiving, at the web browser, the first web page associated with the telephone
5 number.

1 77. The method of claim 76, wherein the first web page associated with the telephone
2 number provides the user with one or more of :
3 predefined information about an individual associated with the telephone number,
4 and
5 access to communications facilities associated with the individual associated with
6 the telephone number.

1 78. The method of claim 77, wherein the communication facilities include one or more
2 of:
3 a second web page;
4 an email
5 an instant message
6 a schedule task;
7 a meeting task;

8 a file;
9 the online status of the individual;
10 a chat facility;
11 a voice interaction facility; and
12 a video interaction facility.